Scholars Research Training Program in Regenerative Medicine, Gene Therapy, and Stem Cell Research

Grant Award Details

Scholars Research Training Program in Regenerative Medicine, Gene Therapy, and Stem Cell Research

Grant Type: Research Training Grant

Grant Number: EDUC4-12812

Investigator:

Name:	Robert Blelloch
Institution:	University of California, San Francisco
Type:	PI

Award Value: $5,000,000

Status: Pre-Active

Grant Application Details

Application Title: Scholars Research Training Program in Regenerative Medicine, Gene Therapy, and Stem Cell Research

Public Abstract:

Statement of Benefit to California:	We envision that the citizens of the state of California will benefit in many ways from our university's proposed Scholars Training Program for graduate students, postdoctoral fellows, and clinical scientists. Collectively, the basic research, translational strategies, and clinical therapies that emerge from the work of our university's California Institute for Regenerative Medicine (CIRM) funded trainees will be an important stimulus to the state economy, particularly the biotechnology sector and associated medical enterprises. Additionally, specific groups of individuals will directly benefit from work that is focused on cell-based therapies for repairing tissues and organs whose damage leads to common medical conditions, for example, diabetes, cardiovascular disease, Parkinson's disease, paralysis and/or immune dysfunction. On the way to achieving the CIRM's ultimate goals in terms of novel regenerative therapies for patients, we envision that numerous other benefits will emerge. For example, human embryonic stem cell (hESC) systems are powerful tools for unraveling the molecular basis of human development, which remains largely a black box. A fundamental lack of understanding regarding the mechanisms that give rise to the hundreds of cell types that form tissues and organs makes it extremely difficult to discern why these processes sometimes go awry, leading to birth defects and/or setting the stage for many diseases. Additionally, novel therapies for other medical conditions are also likely to emerge. In this regard, some forms of cancer are now thought to be associated with the proliferation of stem cells that carry mutations in genes that promote their self-renewal, rather than differentiation and integration into the compartment that they normally occupy. Other important applications include drug development. For example, hESCs and their differentiated progeny could be used to screen promising compounds for efficacy, safety and/or toxicity. Where will the workforce come from that will enable this revolution in how the medical establishment approaches patient care? Stem cell and gene therapy is a rapidly growing field that must be rapidly populated with scientists and clinicians who are specially trained in all aspects of regenerative medicine, a new specialty. This necessity makes the funding of CIRM-sponsored training programs especially critical for institutions such as ours that have the ability to make important research discoveries and translate them into clinical therapies. Our university has a long and distinguished history of training leaders in science and/or medicine who easily traverse the boundaries between academia and industry. Our past successes strongly suggest that our CIRM-funded training programs will be equally successful. Accordingly, we expect that our trainees will become leaders in the field.
